

ABSTRACT

The present invention relates to methods for making a nucleic acid molecule and methods for ligating oligonucleotides. The method includes ligating a first at least partially double-stranded oligonucleotide that has a first and second single-stranded overhang to a second at least partially double-stranded oligonucleotide that has a recognition site for a type IIS restriction enzyme, a modification allowing the oligonucleotide to be coupled to a surface, and a single-stranded overhang. The ligation product can be cleaved with a type IIS restriction enzyme, thereby releasing an elongated fragment having two single-stranded overhangs. These steps can be repeated by using the elongated fragment in a subsequent ligation to another at least partially double-stranded oligonucleotide that has a type IIS restriction enzyme recognition site.